

New Age Business Resilience: What it means to your Business

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Agenda

- > Setting the Stage: Business Resilience is About Business
- > A Review of History: Starting with Storage
- > Business Resilience Technologies Today
- > New Age Business Resilience Possibilities
- > Today's Business Resilience IT Issues
- > Getting Back to Business: How it All Maps to the Bottom Line
- > Looking to the Future of Business Resilience: Partnering with CA for Success



Setting the Stage

> What is “Business Resilience”?

- Backup and Recovery?
- Disaster Recovery?
 - Total or Partial
- Nothing to do with IT?
- Exclusively IT?

Setting the Stage

> Resilience and Continuity from an ITIL perspective

- Business Continuity Management (**BCM**) means:
 - Risk analysis and management
 - Keeping risks acceptable
 - Ensuring reliable minimum capacity for production or service provision
 - Planning to restore business activities if interrupted by a disaster
- IT Service Continuity Management (**ITSCM**) means:
 - Dealing with disasters affecting IT services
 - Maintaining services to allow the business to continue to operate

**Business
Resilience
Is About
Business**

Concepts

> Taking Ownership

- “By design, not default”

> Balance

- “Better” > “Perfect”

Business Resilience

> Many Disciplines



- High Availability
- Continuous Operations
- Disaster Recovery

What is Business Resilience

> High Availability

- Providing for fault tolerant, failure resistant infrastructures and clustering technologies enabling continuous transaction processing accounting for the events of planned and unplanned disruption of transaction processing.

> Continuous Operations

- Providing for system maintenance and backups without impacting the availability of the business applications.

> Disaster Recovery

- Providing for protection against unplanned outages such as natural disasters or man made disasters.

What Kind of Disaster Recovery

> Total Disaster

- A Global Event requiring Total Recovery

> Regional Disaster

- A Service or Provider becomes unavailable requiring Some Recovery from an Alternate Site

> Local Disaster

- A Component or Service becomes unavailable requiring Some Recovery in the Same Site or Alternate Site



Business Drivers

- > Rising Costs of Downtime
- > Available Technology
- > Heightened Risk Awareness
- > Regulations, e.g. SOX
- > Hydro Failure
- > SARS, Bird Flu, etc.
- > Identity Theft



Resilience Driving Events

- > Natural disasters — fire, floods, hurricanes, earthquakes
- > Hardware breakdowns
 - Mirroring Technologies, Channels and Cascaded Directors
- > Software crashes
 - Parallel Sysplex, Data Sharing Subsystems
- > Human error
- > Terror attacks

Disaster Weather Map



Billion Dollar Climate and Weather Disasters 1980 - 2004



NATIONAL NATIONAL OCEANOGRAPHIC ADMINISTRATION CENTER
ASHEVILLE, NORTH CAROLINA

1980
1981
1982

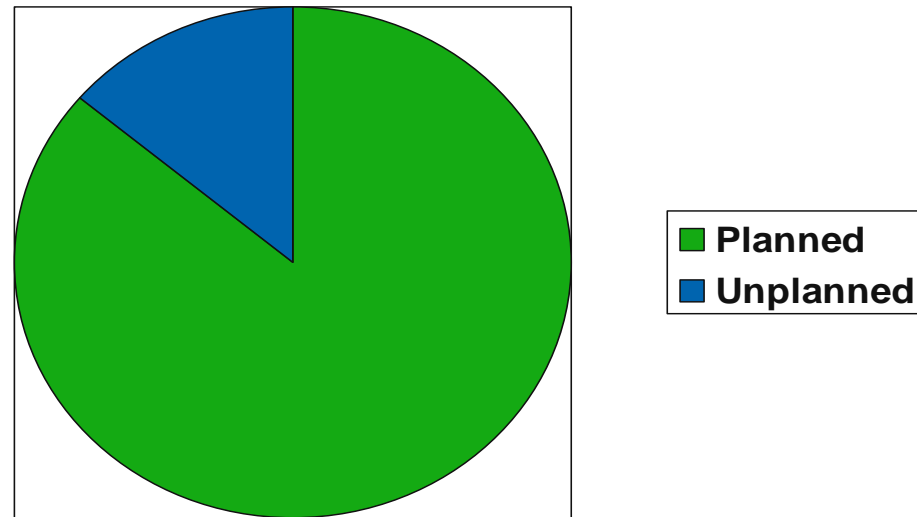
NUMBER OF EVENTS	DISASTER TYPE	NUMBER OF EVENTS	PERCENT FREQUENCY	NORMALIZED DAMAGES (Billions of Dollars)	PERCENT DAMAGE
1 - 3	Tropical Storm/Hurricanes	20	32.3%	188	36.1%
4 - 6	Non-Tropical Floods	12	19.4%	22	4.1%
7 - 9	Heatwaves/Droughts	10	16.3%	144	27.5%
10 - 12	Severe Weather	7	11.3%	43	8.2%
13 - 15	Fires	6	9.7%	43	8.2%
16 - 20	Frosts	2	3.2%	6	1.1%
	Blizzards	2	3.2%	6	1.1%
	Ice Storms	2	3.2%	6	1.1%
	Reservoir	1	1.6%	2	0.4%
		62		517	

Please note that the national map data collected here reflects a combination of different disaster events. For more information, visit us at www.ncep.noaa.gov/disasters



Downtime

- > Across IBM and Gartner surveys looking at downtime for critical or tier one applications, planned downtime was 253 minutes versus 41 minutes of unplanned downtime weekly.





Downtime Impacts

> Productivity

- Cost of idle workers

> Damaged Reputation

- Customers
- Business Partners
- Competitors

> Revenue

- Direct Loss
- Service Level Payments
- Future Revenue
- Billing Losses



Cost of Downtime

<u>Type of Business</u>	<u>Average Hourly Impact</u>
Retail Brokerage	\$6,450,000
Credit Card Sales Authorization	\$2,600,000
Home Shopping Channel	\$113,750
Catalog Sales Centers	\$90,000
Airline Reservations Centers	\$89,500
Cellular Service Activation	\$41,000
Package Shipping Service	\$28,250
On-line Network Connect Fees	\$25,250
ATM Service Fees	\$14,500



Miscellaneous Terms

> Tiers of Disaster Recovery

- Tier 0 (no recovery capability, no plan, no hot-site)
- Tier 1 (data is backed up, no hot-site in plan)
- Tier 2, 3 (tape intensive recovery methods, hot-site)
- Tier 4 (disk mirroring or disk point-in-time facilities)
- Tier 5 (software/ database specific recovery – two sites)
- Tier 6 (near zero or zero data loss disk mirroring)
- Tier 7, which is a completely automated self-managed failover of servers, storage, application & system software, and networks.



Starting With Storage

- > Backup and Recovery
- > HSM
- > Tape Management
- > Storage Management
- > Mainframe and Distributed



Business Resilience Technologies Today

> Resilience:

- Enterprise-wide Automation
- Performance
- Network Management

> Database integrity, availability

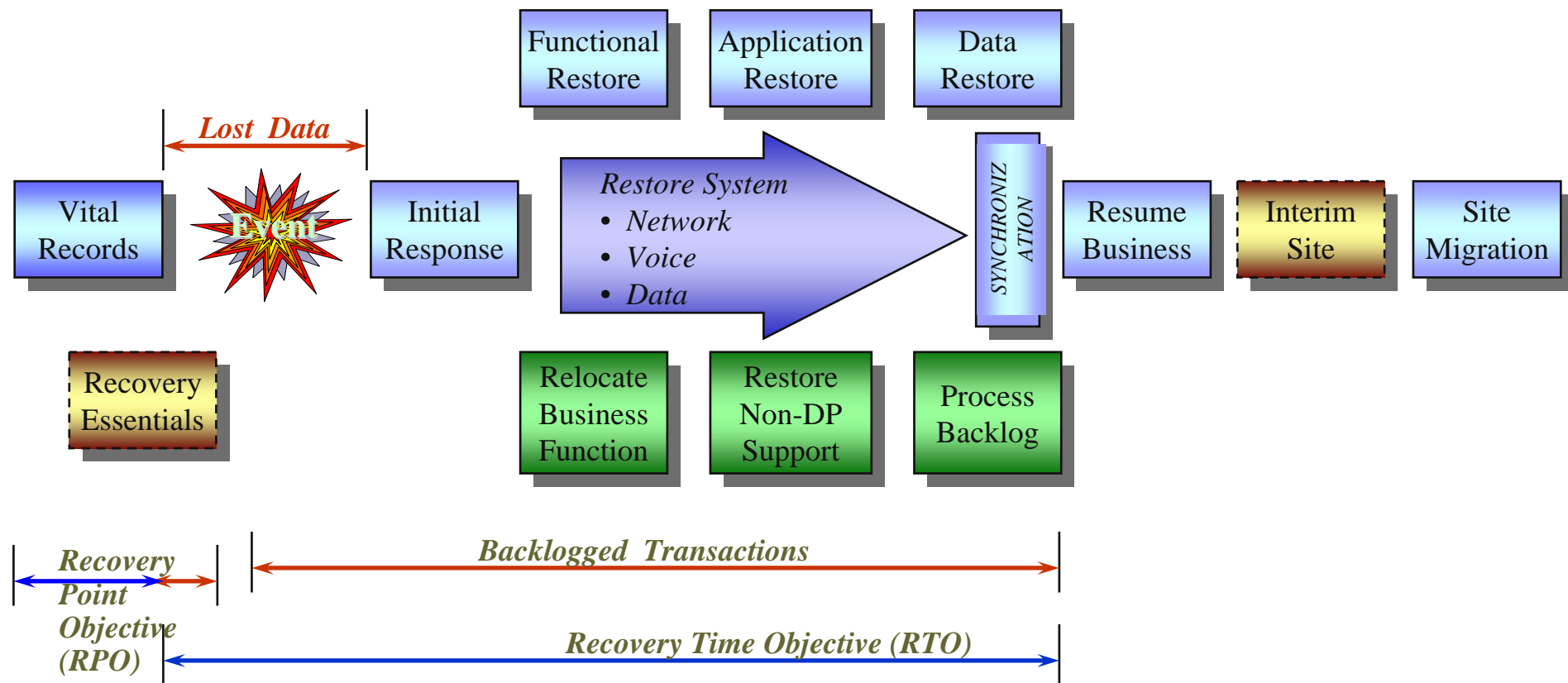
> Security to guard data integrity, confidentiality

> Tools to examine OS configuration for loopholes

> Cleaning up legacy

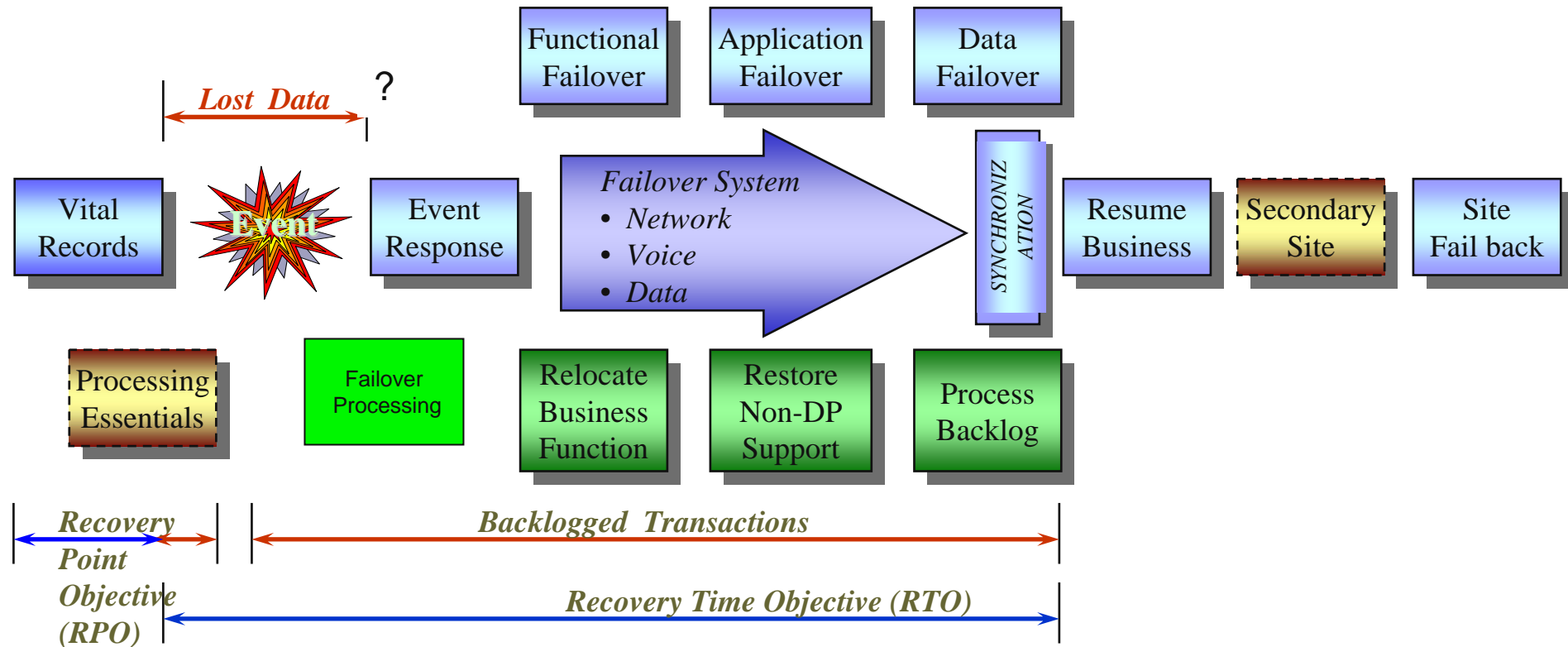


Traditional Recovery Process



- Restore vs. Failover!
- Lost Data could be larger than shown here
- RPO & RTO could extend past 24 hours

Business Resilience Process

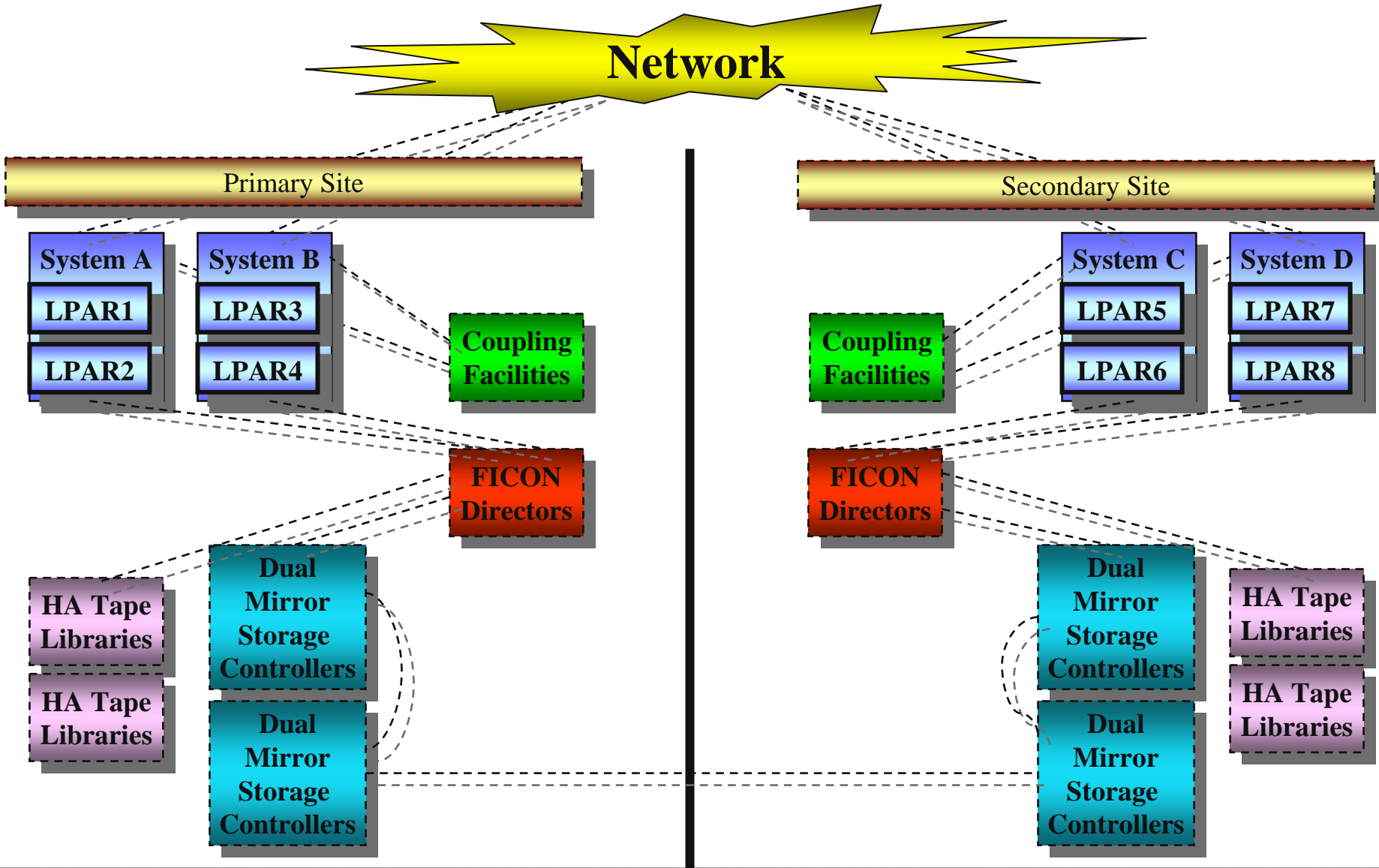


- With Failover, potential for less data loss
- RPO & RTO could be less than 1 hour (depending on implementation of tier)

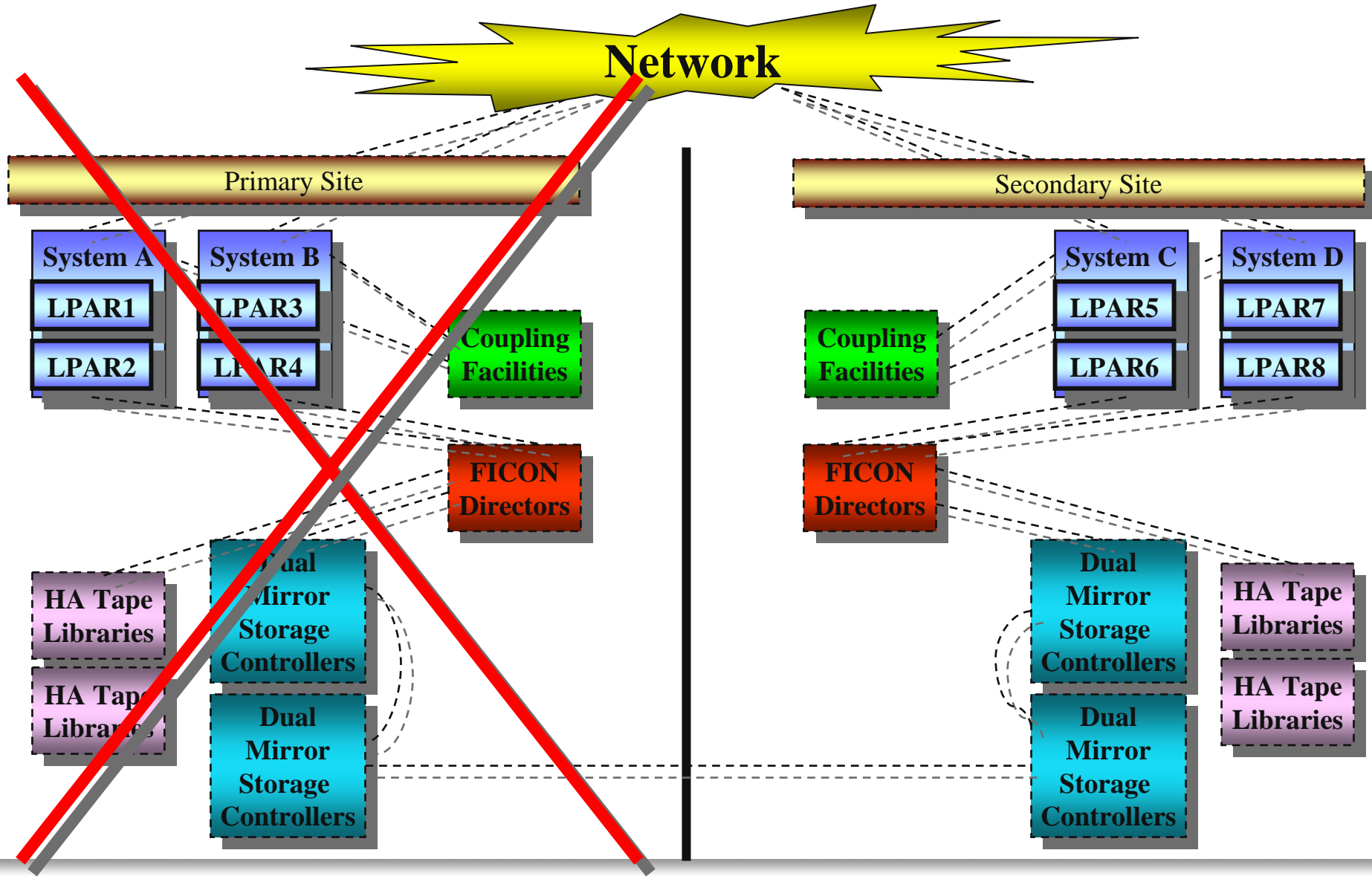
Possibilities (from previous slide)

- > Loss of Connectivity
- > Loss of Part of a Mirrored Storage Controller
- > Loss of a Data Sharing Environment
- > Loss of a z/OS Image
 - Dynamic Reconfiguration
- > Loss of a Processor Footprint
 - Capacity on Demand
 - Backup Capacity on Demand
 - On/Off Capacity on Demand

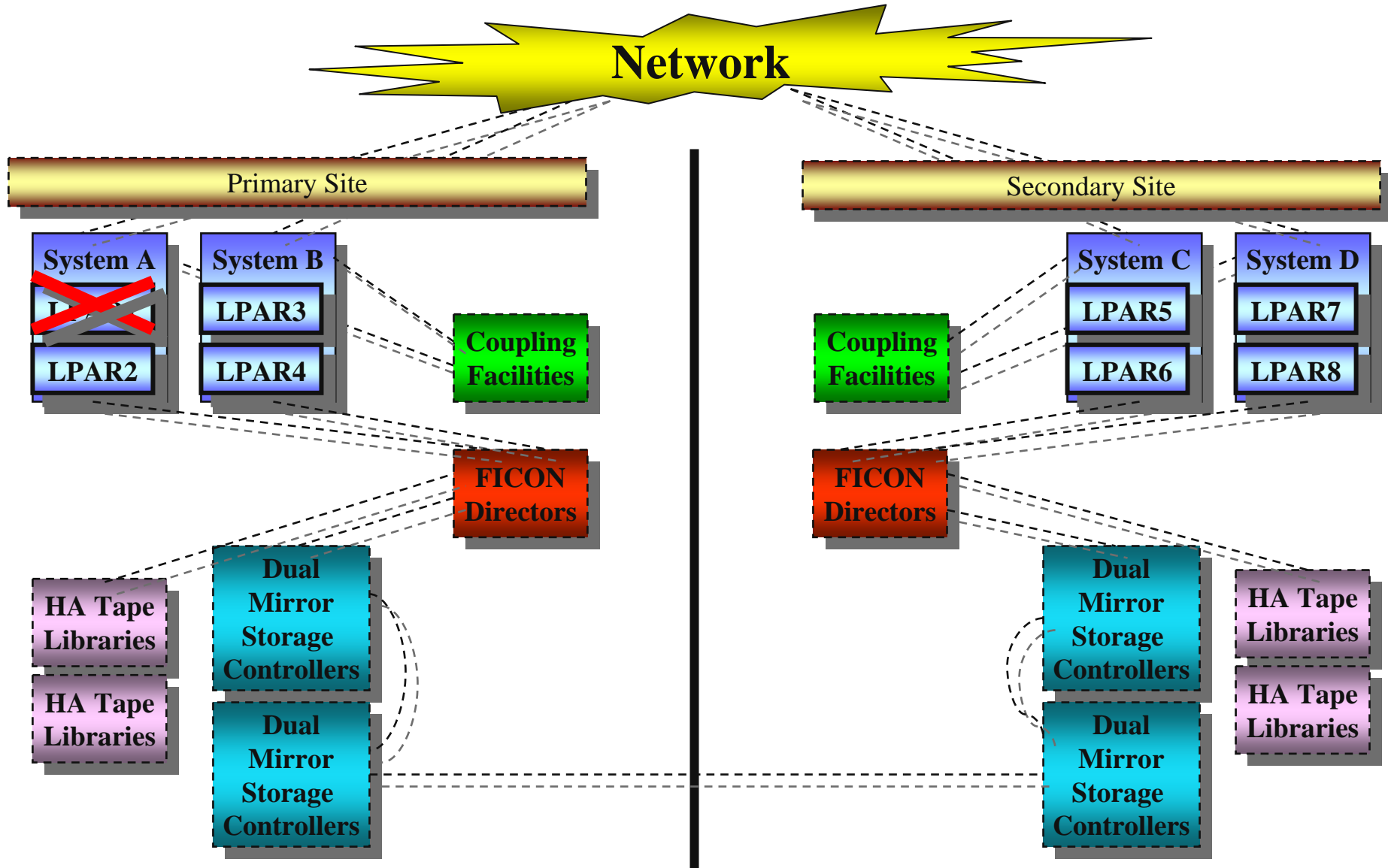
New Age Business Resilience Possibilities



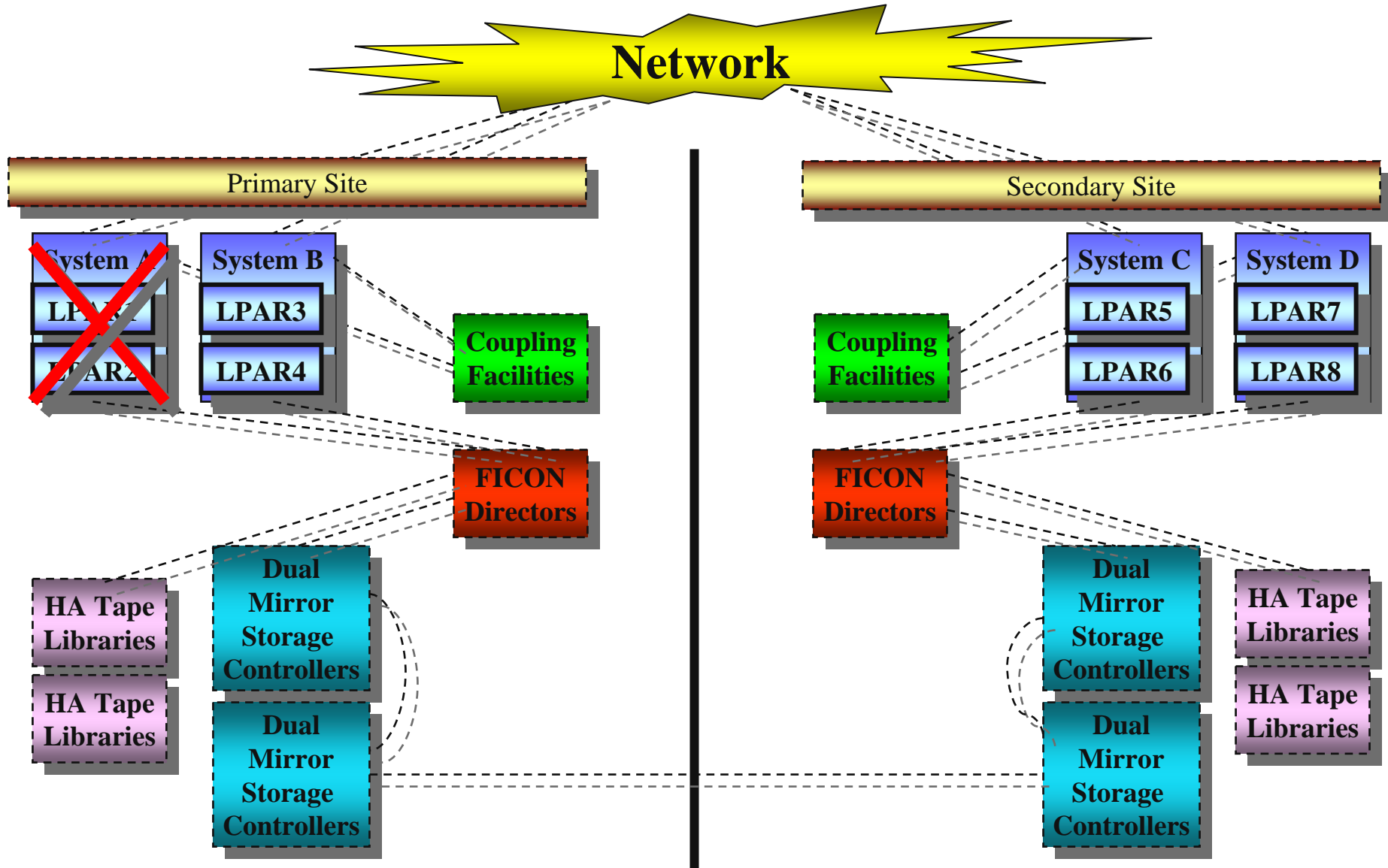
New Age Business Resilience Possibilities- Meteor Falls Through Data Center



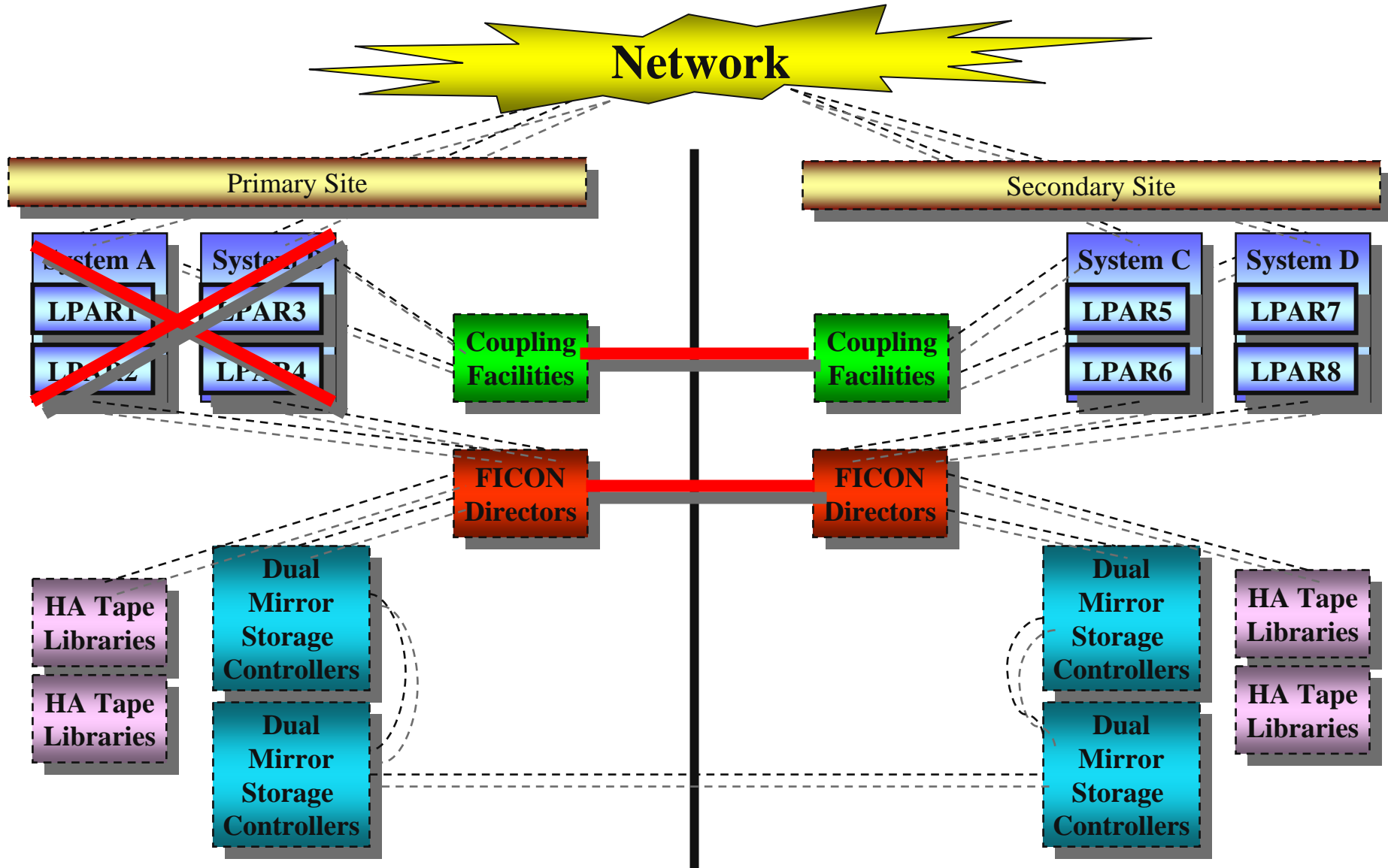
New Age Business Resilience Possibilities- Single LPAR Failure



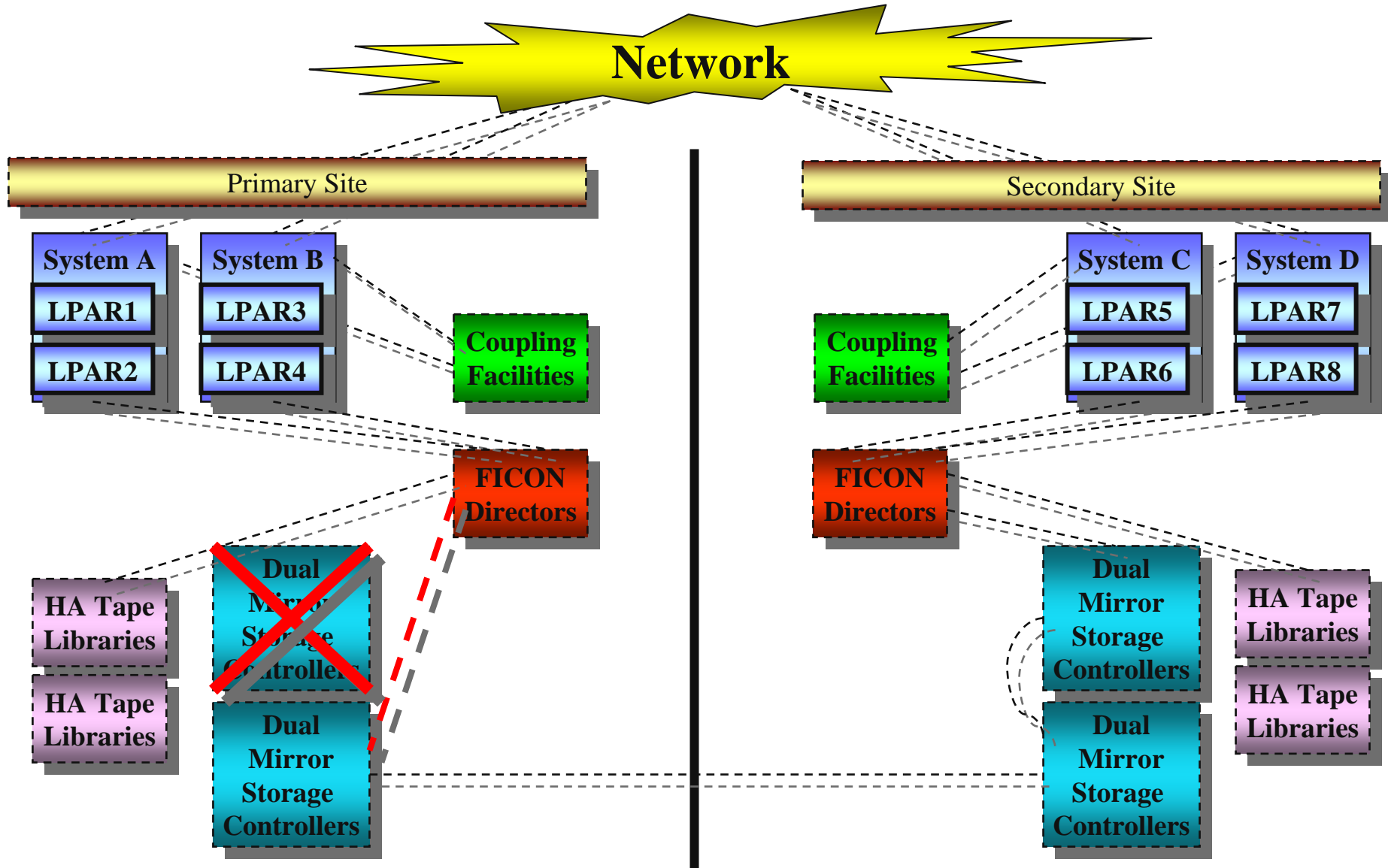
New Age Business Resilience Possibilities- Single CPC Failure



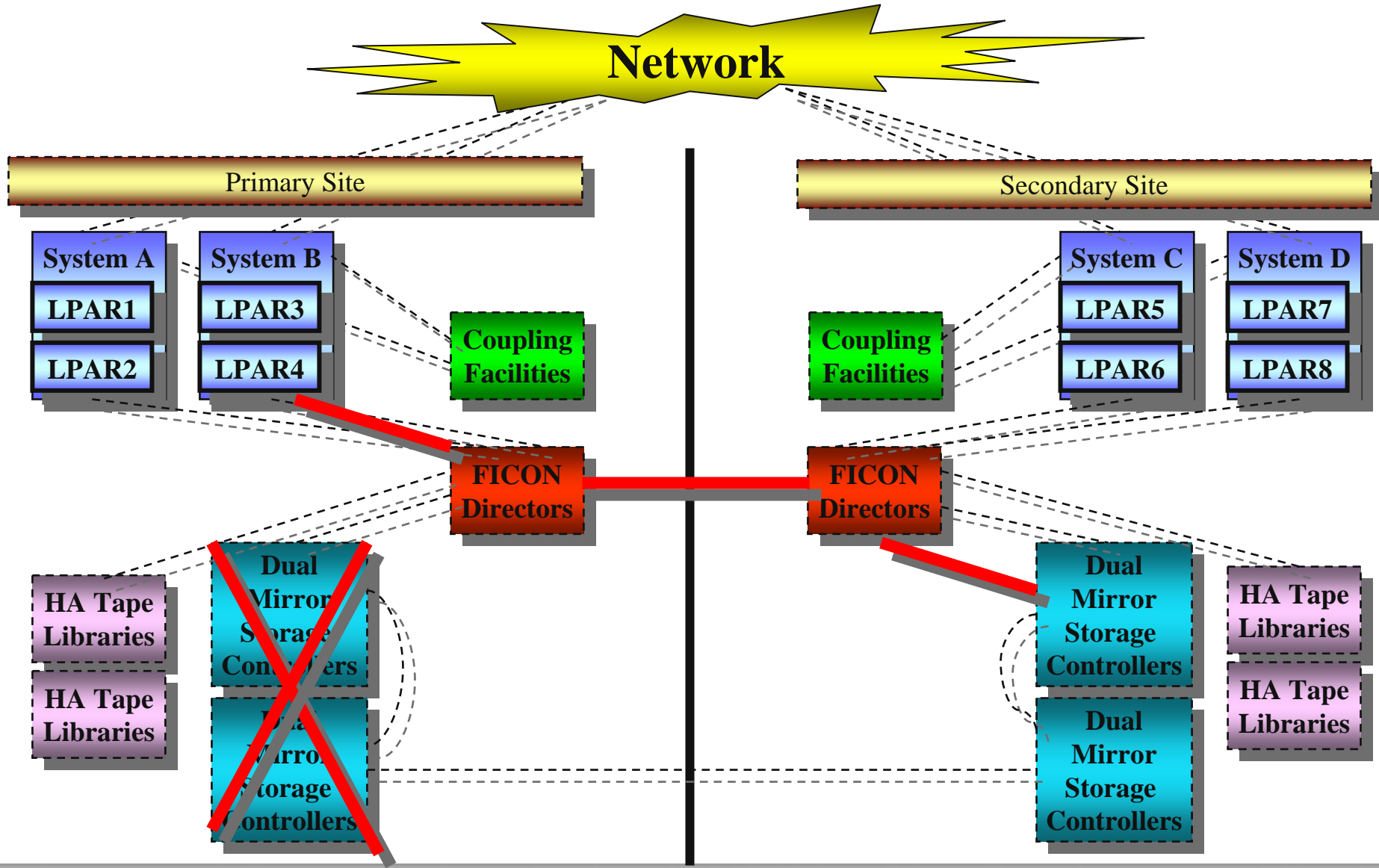
New Age Business Resilience Possibilities- ALL Systems Failure



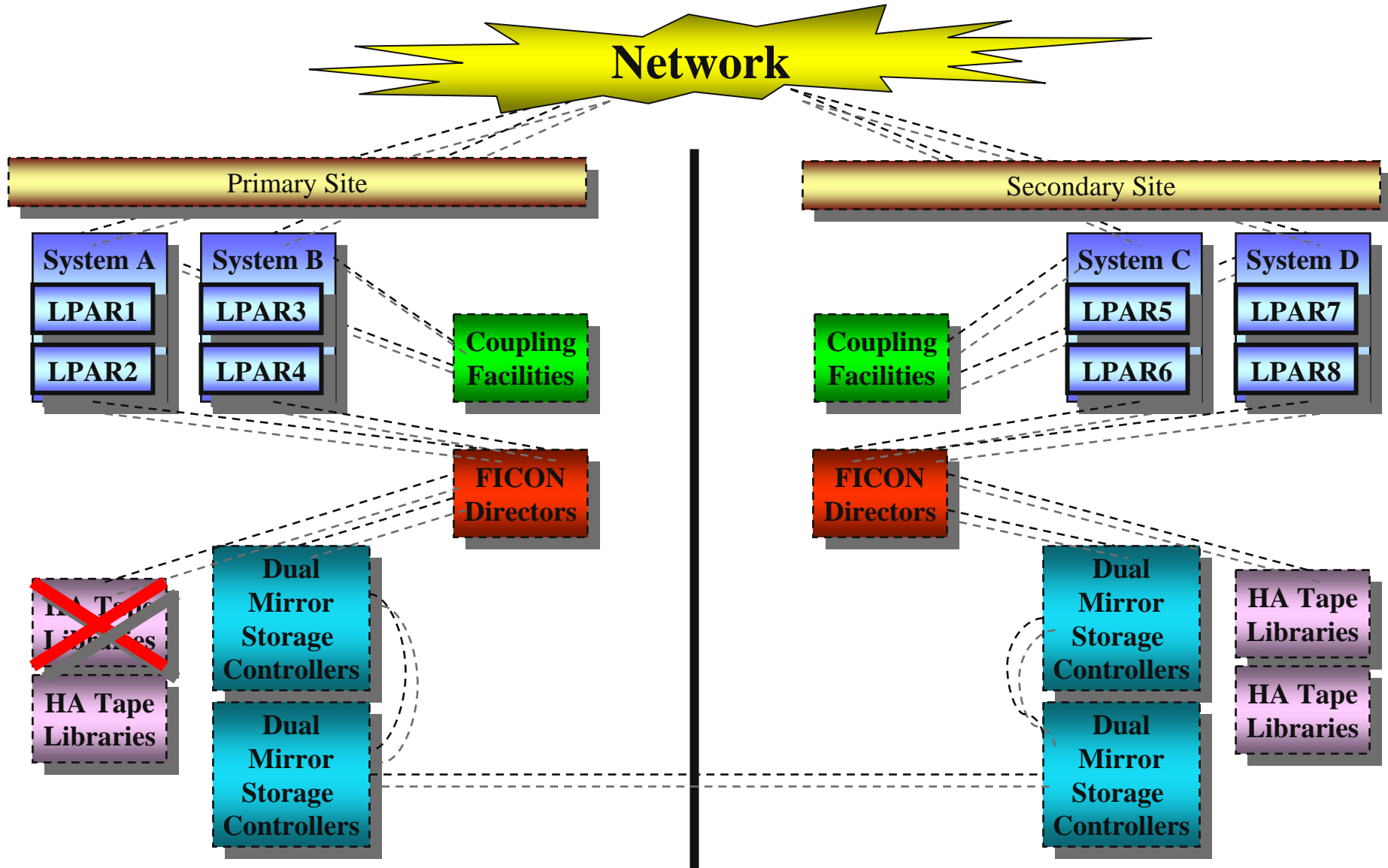
New Age Business Resilience Possibilities- ½ Storage Controller Failure



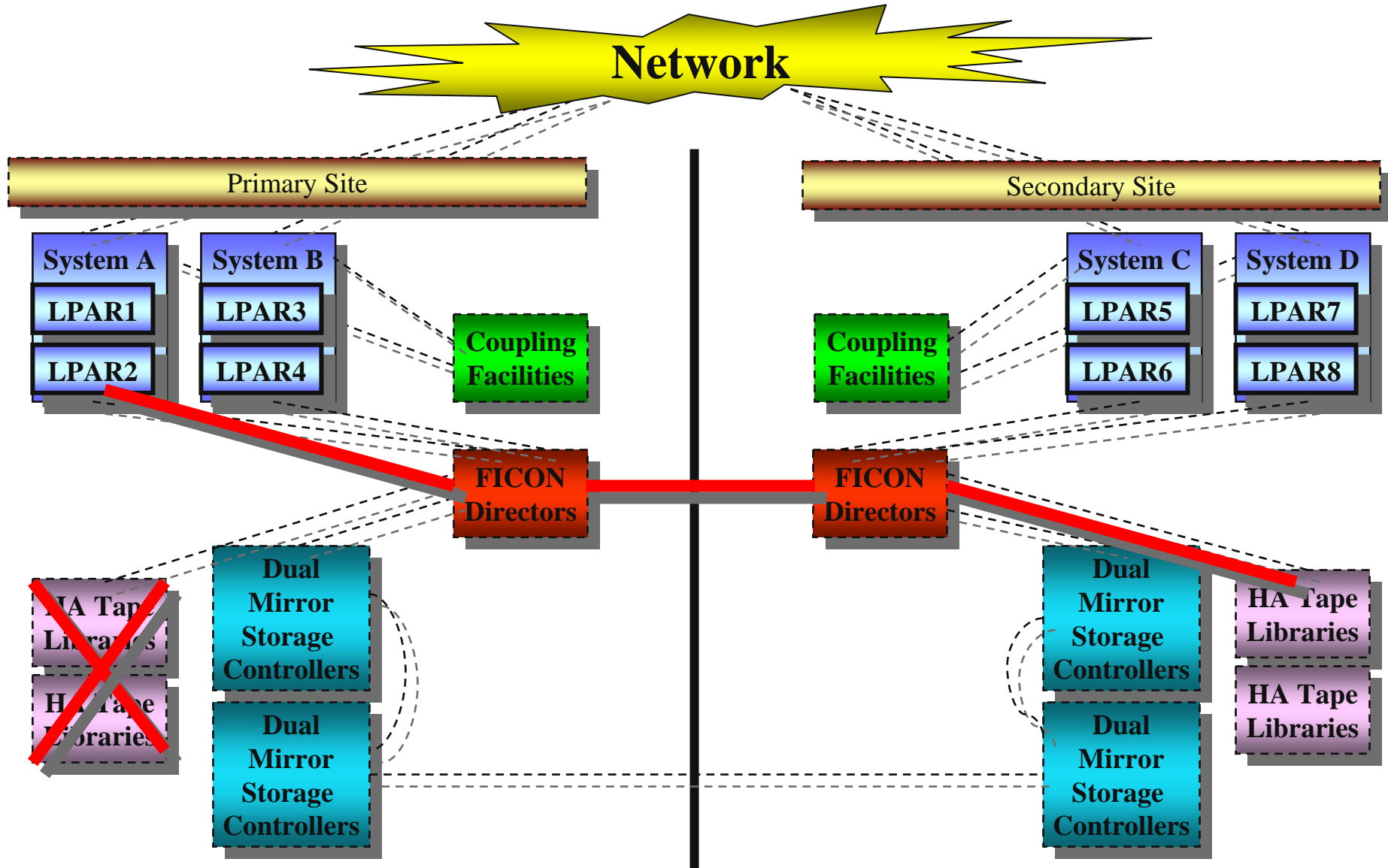
New Age Business Resilience Possibilities- Both Mirrored Storage Controller Failure



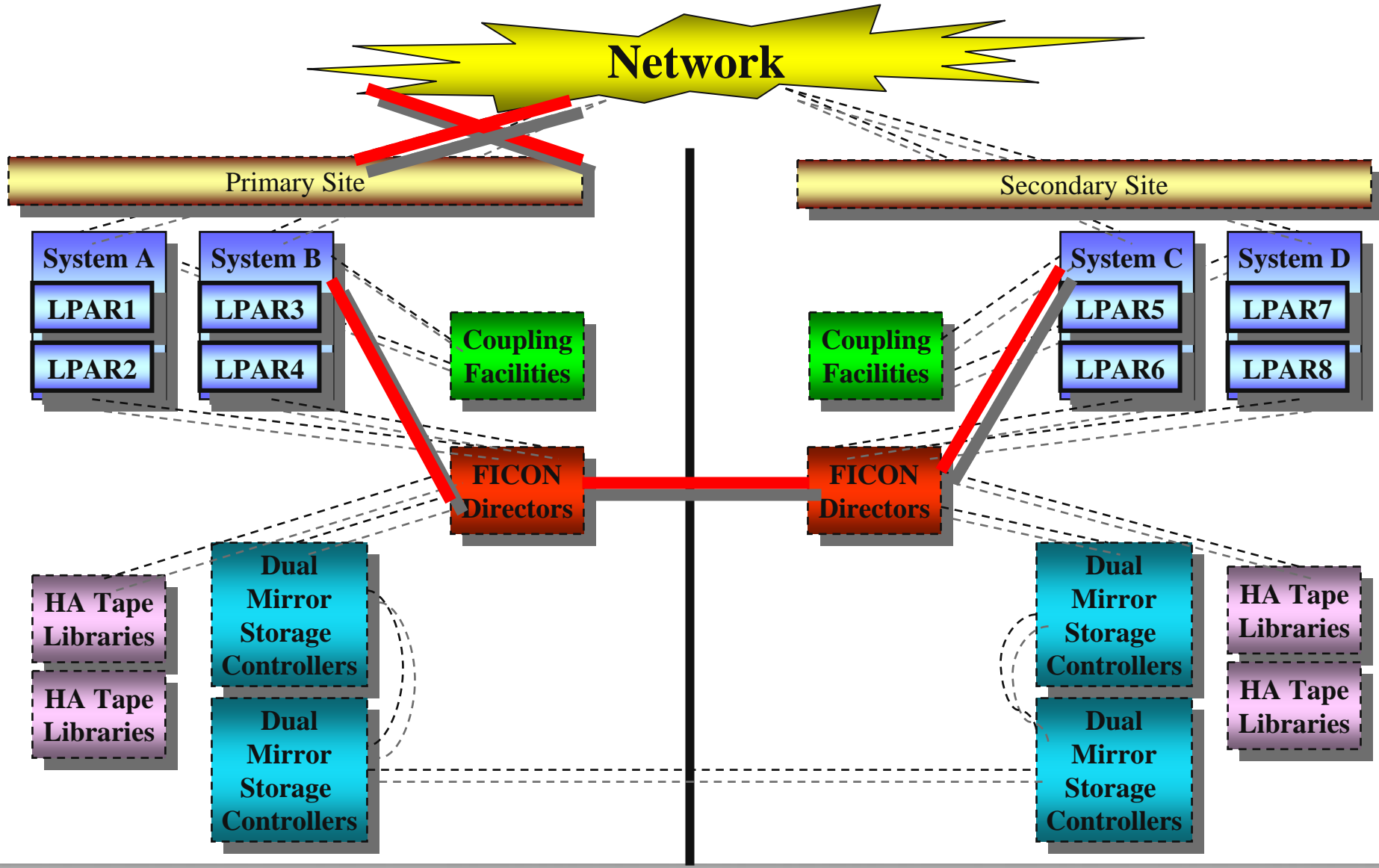
New Age Business Resilience Possibilities- ½ Tape Library Failure



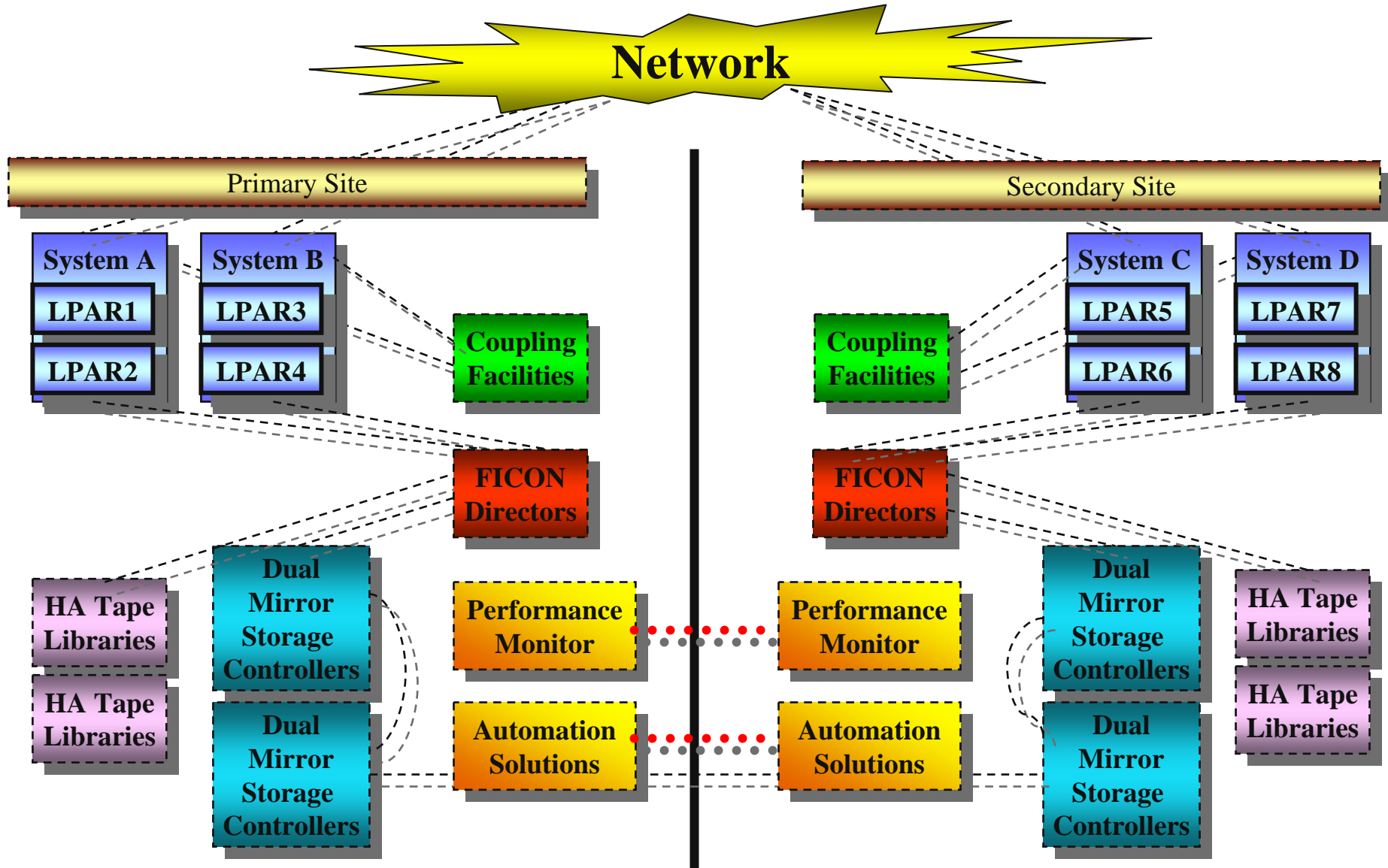
New Age Business Resilience Possibilities- Full Tape Library Failure (Tapes Duplexed)



New Age Business Resilience Possibilities- Network Failure



New Age Business Resilience Possibilities- Performance Monitor and Automation Solutions





Today's Business Resilience IT Issues

- > Beyond "Downtime"
- > Reputation
- > "Capricious Malice"
- > Global Infrastructure
- > New generations:
 - Mainframe (various types of Processors)
 - "Distributed" Platforms
 - "The Network is the Computer"
 - Ubiquitous Computing Devices
 - Technologists



How it all Maps to the Bottom Line

- > IT's still about business
- > ROI (Return On Investment) vs RON (Return On Negligence)
- > 99.999% vs 100%
- > Choose your consequences

Looking to the Future of Business Resilience: Partnering with CA for Success

> We're here to enable you with:

- Software
- Services
- Vendor Consolidation

CA Software Solutions

> Storage

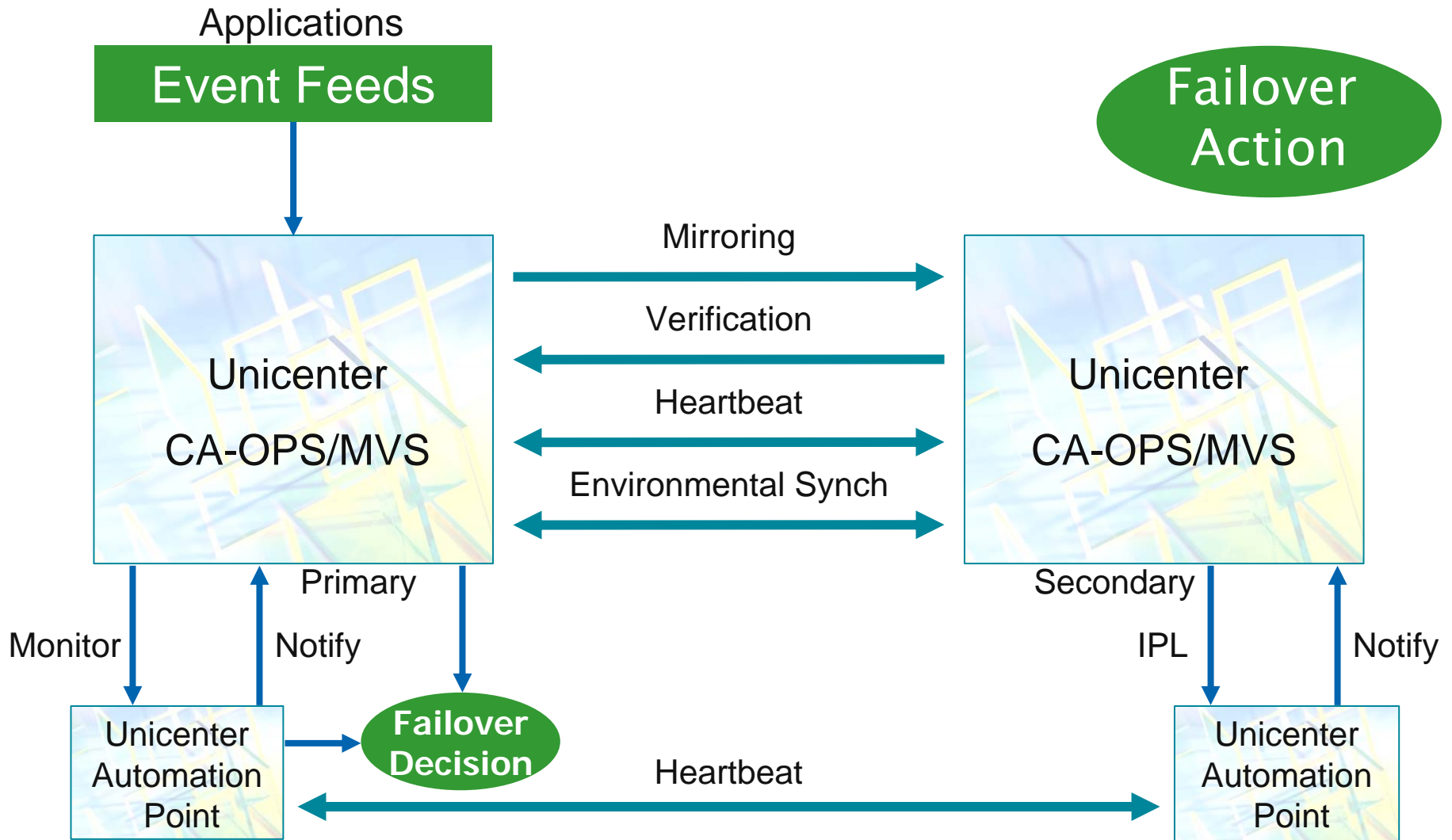
- Backup, Recovery and HSM
 - CA-Disk
 - BrightStor ArcServe Backup
 - BrightStor HSM
- Tape Management
 - CA-1, Dynam/TLMS and Copycat
 - BrightStor Tape Encryption
- Storage Management
 - BrightStor CA-Vantage
 - BrightStor SRM
- Other Resilience-Enabling Technologies
 - VTape
 - BrightStor High Availability

CA Software Solutions

> Resilience: Automation & Performance

- OPS/MVS
- Sysview
- MIM
- Automation Point
- NSM and options

CA Automation Where we fit Recovery Architecture



CA Software Solutions

> Resilience: Network Health

- NetSpy
- NetMaster (IP and SNA)
- NSM options
- eHealth and Spectrum solutions

CA Technology Services

- > Experienced consultants and partners
- > Pre-defined services including HealthChecks
 - CA Solutions
 - Performance
 - Operational Environments
- > CAMPUS, PROWL to add consistency and simplicity to MF software maintenance
- > Assessments, upgrades, consolidations

Vendor Consolidation

> Fewer Vendors =

- Fewer fingers pointing
- Fewer necks
- Integration
- Interoperability
- Solid future

> Optimal number is two (one is a monopoly, more is a pain)

> Services and utilities to convert to leading-edge, integrated solutions

Best Practices for Business Resilience

> Simplicity = Manageability

> Greater visibility

- Achievable plans
- Awareness at all stages of “irresilience events”

> Integrated functionality

- Interoperability
- Single point of control

Bringing IT All Together

- > You can't stop the future
- > You can't even predict it
- > But you can choose it
- > Get the business perspective
- > Think it through carefully
- > Choose your consequences



Conclusion

- > Business Resilience is About Business
- > It Goes Beyond Storage
- > Enterprise Resilience
- > Dealing with Today's Issues
- > Partner with CA for Success

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